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Title Slide: Data Collected Through the ECLS-B

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The ECLS-B collected a wealth of data from children, their families, and their early care and education settings.

This module provides more detailed information about some of the topics and components of the study described within the introductory module. Specifically, this module focuses on the direct child assessments.

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The design of the assessment plan for the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) was guided by three principles. The first guiding principle was to obtain measures of growth using repeated measures at multiple time points. The second was to obtain, wherever possible, direct measures of multiple aspects of child development and functioning rather than relying on parental reporting. Direct measures reduce potential response bias that might be expected when asking parents about their children's developmental accomplishments. The third guiding principle was to obtain information about a broad spectrum of children's early experiences in order to understand the relationship of these experiences to children's development over time.

This module is meant to provide an overview of the assessments in the ECLS-B. Much more detail can be found in the ECLS-B technical documentation. The ECLS-B has two publicly available psychometric reports that present information on the cognitive, physical, and socioemotional assessments which are listed here and can be accessed by clicking on the report title.

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This chart shows the different assessments fielded in each round of data collection by the domain of development they measured. As can be seen here, the ECLS-B measured children's cognitive knowledge and skills, physical development, and socioemotional development in every round of data collection. Where possible, the same measure was used in different data collection rounds to enable direct comparisons between rounds, specifically to support analyses of children's growth and development. However, in the cognitive and socioemotional domains, there was no existing measure that was suitable for use in all rounds of data collection, so the measures varied across time.

Certain considerations guided the selection of assessments. The assessments needed to have reliable, standardized administration and scoring rules and be appropriate for administration in a home setting. They needed to maximize the amount of information that could be gathered in a short time frame. Also, they needed to be able to

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accommodate children with varying needs and abilities, such as children with disabilities and those from homes in which English was not the primary language spoken.

This portion of the training module focuses on the direct assessments used in the different rounds of ECLS-B data collection. Some background information on the development of the assessments is provided, and the structure of tasks in each assessment are described. Also, the modules describe what each assessment measures and the data that are available for analysis in the ECLS-B data file.

There are two ways to access the information within this module. You can click on a particular box in the chart shown here to hear information about the assessments listed in the box. For example, click on “Two Bags Task” to hear more information about that assessment. Or you can click on the box for a particular assessment domain (cognitive, physical, or socioemotional development) to hear information about all the assessments in the domain that were used across all data collections. At the end of each portion of the module, you will be provided with buttons that will either return you to this chart, where you may select another box or exit the module.

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In the 9-month and 2-year data collections, children’s cognitive knowledge and skills were measured with an assessment called the Bayley Short Form, Research Edition, or BSF-R, which was developed specifically for use in the ECLS-B.

Initially, the full Bayley Scales of Infant Development, Second Edition, or BSID-II, was identified for use in the ECLS-B because it met many of the study criteria for an assessment. It was appropriate for measurement for the age range of children in the study and, because the BSID-II could be fielded in the 9-month and 2-year data collections, it could be used to measure growth. It also measured a wide range of skills, thereby providing rich descriptive data about children’s developing skills in many areas. It has well-standardized norms and reasonable predictive ability and had been used in other large-scale studies. The BSID-II is among the more psychometrically rigorous standardized assessments available for infants and young children and is generally recognized as the best available assessment of developmental status, in terms of reliability and validity, for children at this age.

However, a field test of study data collection procedures showed that the BSID-II did not meet a key study criterion for an assessment, specifically that it be feasible and efficient for field staff to administer in the children’s homes. The length and complexity of the BSID-II put too great a burden on both field staff and participating children to be used in such a large-scale study. The decision was made to design a shortened and streamlined version of the BSID-II for the national data collection.

NCES worked with the publishers of the BSID-II to shorten the assessment and to simplify the administration and scoring. This was necessary to make it reasonably easy to administer by a largely lay-field staff of about 300 people while still being useful and an adequate measure of the skills measured in the full BSID-II.

Specifically, the number of items in the assessment, the number of materials needed to conduct the assessment, and the complexity of the tasks and language that needed to be used during the assessment were all reduced. Instructions for scoring and administration that staff needed to follow while in the children's homes were simplified. Additionally, it was decided that those items that did not have to be scored in the home would be scored by other study staff after data collection was completed. Several years of pilot testing during which the validity and reliability of the shortened and streamlined measure were evaluated resulted in the adaptation of the BSID-II that was used in national data collection, that is, the BSF-R. Scores produced from the BSF-R are on the BSID-II scale, meaning that the scores indicate how the ECLS-B children would have performed on the full BSID-II assessment had they been administered all of the BSID-II items.

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One of the ways in which the assessment was structured to reduce burden on both the assessor and child was to group the items into sets that were administered based on a child's demonstrated skills. At each age, a core set of items, was administered to all children. In the 9-month data collection, the core set included items measuring the skills that children ages 8 months to 10 months were expected to demonstrate. In the 2-year data collection, the core set included items measuring the skills that children ages 23 months to 25 months were expected to demonstrate.

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The children's performance on the core set of items determined whether they received a second set of items and, if so, which set. The administration stopped after the core set if, based on the child's performance, it was determined that those items were sufficient to measure the child's knowledge and skills. Children who demonstrated skills at the low end of the core set of items were administered a second set of easier items, referred to as the basal set. Children who demonstrated skills at the high end of the core set of items were administered a second set of more difficult items, referred to as the ceiling set. This two-stage assessment model enabled and supported the best measurement at both tails of the ability distribution without administering every child every assessment item.

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The ECLS-B data file includes indicators of children's overall mental knowledge and skills as measured by the BSF-R mental scale in both the 9-month and 2-year data collections. These include overall scale scores, X1MTLSCL and X2MTLSCL, and standardized *t*-scores, X1MTLTSC and X2MTLTSC.

As noted earlier, the BSF-R scale scores are on the BSID-II scale, meaning that the scores indicate how the ECLS-B children would have performed on the full BSID-II assessment had they been administered all of the BSID-II items. The overall scale score is useful for looking at children's knowledge and skills at one point in time and

also over time. The scale score is on the same metric at both the 9-month and 2-year time points, so it can be used for longitudinal analysis, specifically to look at children's growth in this cognitive domain over time.

The *t*-score, which has a mean of 50 and a standard deviation of 10, is normed to the child's age at the time of assessment. It is most useful for analysis of outcomes at one point in time, particularly when the focus of the analysis is on subgroup differences.

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In addition to an overall indicator of cognitive knowledge and skills, the ECLS-B provides a series of proficiency probabilities that reflect children's performance on a cluster of four to six items of about the same level of difficulty. These proficiency probabilities are not meant to be interpreted as subscale scores. Proficiency probabilities can be used to better understand where growth is occurring by looking at what kinds of skills children demonstrate, and the difficulty of those skills. Scores on the proficiency probabilities range from 0 to 1 and indicate the probability that a child has acquired the skills represented in the cluster of items. The higher a child's score is on a given proficiency probability, the more likely it is that the child had acquired the skills measured in the item set.

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These are the 10 proficiency probabilities available for analyses of mental, or cognitive, knowledge and skills at the 9-month and 2-year time points. The levels are ordered and show a progression from easier to more difficult skills from A to J. Thus, the levels can be thought of as describing a developmental sequence. The levels are named to reflect the common content or skills that the items within each cluster tap. However, a researcher interested in using the proficiency levels should read the more detailed descriptions of the levels in the user documentation in order to better understand exactly what skills or content each level covers. For example, level A can be characterized as the ability to explore objects, such as, reaching for and holding objects, manipulating objects like a cup or a string, and banging objects in play. Again, researchers should keep in mind that these are levels, not subscales, even though the content of the items in the cluster tends to be similar. A resource document containing a summary of the proficiency probability levels can be accessed by clicking on the underlined screen text on this slide.

This concludes the discussion of the cognitive, or mental, scale of the Bayley Short Form-Research Edition that was fielded during the 9-month and 2-year data collections. To return to the chart of direct child assessments to make another selection, click the "Return to List" button. To exit the module completely, click the "Exit" button or you will automatically be advanced to the next slide within the module.

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There is no one set of measures to continuously provide information on children's cognitive growth over the first 5 to 6 years of life. So when the ECLS-B entered the design phase for the preschool and kindergarten cognitive assessments two major changes occurred. The collection moved from a year-round model where data were collected near the child's birthday, to one data collection in the fall of the school year. In order to gain a more appropriate assessment of mental knowledge and skills, the ECLS-B moved from the BSF-R to more targeted assessments of early mathematics and reading knowledge and skills.

In the 9-month and 2-year data collections, children's cognitive development was measured generally using the Bayley Short Form, Research Edition. A different assessment was needed for the preschool and kindergarten data collections because the BSF-R was not an appropriate measure for children ages 4 and older. Also, the study design called for assessment of more academically oriented skills and knowledge beginning in the preschool round. No one existing assessment met the study's criteria, specifically that the assessment cover a broad range of skills and topics, that it be efficient in terms of time and complexity of administration, and that it be developmentally appropriate for children ages 4 to 6 with a wide variety of knowledge and skills. Therefore, an assessment battery that incorporated items from a number of existing assessments was developed specifically for the ECLS-B.

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Children's early reading and mathematics knowledge and skills were measured in the preschool and kindergarten rounds of data collection. The reading assessment included items measuring letter recognition, letter sound knowledge, recognition of simple words, phonological awareness, receptive and expressive vocabulary knowledge, and knowledge of print conventions. The mathematics assessment included items measuring number sense, counting, operations, geometry, pattern understanding, and measurement.

In addition to measures of reading and mathematics, an assessment of children's color knowledge was included in the preschool round of data collection. It was not included in the kindergarten collections because it was most appropriate for children of preschool age.

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The reading and mathematics assessments used an adaptive design to maximize accuracy of measurement and minimize administration time. Each child was administered a set of items that was most appropriate for his or her level of knowledge and skills. This procedure reduced the time burden on children, as well as the likelihood that children would become frustrated by being asked questions that were too easy or too difficult.

The structure of the assessments in preschool was somewhat different from the structure of the assessments in the kindergarten collections. In preschool there were separate assessments measuring language and literacy in the early reading domain. The language portion was administered to all children. The literacy portion was only administered to children who demonstrated sufficient English language skills on the language portion of the assessment.

The preschool mathematics assessment began with a first-stage routing section that included items covering a broad range of difficulty. A child's performance on the routing section determined which one of the two second-stage tests the child was administered, either a basal set of lower-difficulty items or a ceiling set of higher-difficulty items. The second-stage tests varied by level of difficulty so that a child would be administered questions appropriate to his or her demonstrated level of ability for each of these cognitive domains.

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In kindergarten, both the reading and mathematics assessments began with a first-stage routing test and three second-stage tests, one with lower-difficulty items, one with items of medium difficulty, and one with higher-difficulty items.

While the procedures just described here resulted in children being routed to sets of items tailored to their ability level, it was still possible for some items within the set to which they were routed to be too difficult. For this reason, in both the preschool and kindergarten collections, discontinue or stopping rules were used at various points in the reading and mathematics assessments to ensure that children would not be asked to answer questions beyond the level of ability they had already demonstrated.

More details about these discontinue rules can be found in the *Preschool-Kindergarten 2007 Psychometric Report* – which is accessible by clicking the underlined screen text, 'discontinue or stopping rules'.

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Two types of scores for the early reading assessment are provided on the ECLS-B data file: a theta score and an overall scale score. Each of these scores is provided at each round of data collection for each child who participated in the reading assessment. The theta score is an estimate of a child's ability in reading based on that child's performance on the subset of items administered in the reading assessment. The overall scale score is an estimate of the number of items a child would have answered correctly if the child had been administered all of the questions in the reading assessment. Therefore, the overall scale score is a predicted score based on the child's ability estimate derived from performance on the items the child was administered.

Both the reading theta and overall scale scores are indicators of children's reading knowledge and skills at any given point in time and also over time. Therefore, both of these scores are appropriate for analysis of status in one round and of growth across rounds.

The theta scores range from approximately -2 to 2 and, therefore, may be less intuitively interpretable than the scale score, which ranges from 0 to 85 and can be thought of as the number correct. However, the theta scores are more normally distributed than the scale scores, which may make them better suited for certain analyses.

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The reading assessment also included a specific set of items meant to measure children's expressive language. Children were administered two items from the *preLAS* 2000 Let's Tell Stories subtest. The stories *Rainstorm* and *Butterfly* were administered in the preschool round, and the stories *Shoemaker* and *Butterfly* were administered in both kindergarten rounds. For each of these stories, the assessor pointed to a series of pictures while telling the child a scripted story. After each story was completed, the child was asked to retell the story using the pictures as a prompt if needed.

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Children's responses were audiotaped for later scoring. Trained coders listened to the audiotapes and evaluated the quality of the children's retelling of the stories using a standardized coding scheme. The expressive language scores range from 0 to 5. On the low end, a 0 indicates that the child provided no response, demonstrating a low expressive language skill set. On the high end, a 5 indicates that a child retold the stories in articulate, detailed sentences, demonstrating vivid vocabulary and complex idea construction.

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Two types of scores for the early mathematics assessment are provided in the ECLS-B data file: a theta score and an overall scale score. Each of these scores is provided at each round of data collection for each child who participated in the mathematics assessment. The theta score is an estimate of a child's ability in mathematics based on the child's performance on the items actually administered in the mathematics assessment. The overall scale score is an estimate of the number of items a child would have answered correctly if that child had been administered all of the questions in the mathematics assessment. Therefore, the overall scale score is a predicted score based on the child's ability estimate derived from performance on the items the child was administered.

Both the mathematics theta and overall scale scores are indicators of children's mathematics knowledge and skills at any given point in time and also over time. Therefore, both of these scores are appropriate for analysis of status in one round and of growth across rounds.

The theta value for the majority of the children assessed falls in the range of approximately -2 to 2 and, therefore, may be less intuitively interpretable than the scale score, which ranges from 0 to 71 and can be thought of as the number correct. However, the theta scores are more normally distributed than the scale scores, which may make them better suited for certain analyses.

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To assess color knowledge, children were shown 10 teddy bears and asked to name the colors of the 5 teddy bears indicated by the assessor. A child received 2 points for each color identified in this way. For all colors the child could not name when it was pointed to, the assessor gave the child the name of a color and asked the child to point to the bear of the color indicated. A child was given 1 point for items for which he or she could not provide the name but could correctly identify the color when the assessor provided the color name. Children who could do neither for a color received no points for that color. Thus, the range of scores was 0 to 10. It is important to note that the mean score on this assessment is fairly high, because most children were able to name the colors of the bears. For this reason, researchers may want to analyze the color knowledge score as a dichotomous measure indicating whether a child named all 5 colors or not, rather than as a continuous one.

This concludes the discussion of the measures of early reading and mathematics knowledge and skills that were fielded during the preschool and kindergarten data collections. To return to the chart of direct child assessments to make another selection, click the “Return to List” button. To exit the module completely, click the “Exit” button or you will automatically be advanced to the next slide within the module.

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The ECLS-B assessed children’s physical development in multiple ways. Weight, height (or length for infants), middle upper arm circumference, and head circumference were measured in every round of data collection. Body Mass Index, or BMI, could also be calculated for each round since height and weight were obtained.

Middle upper arm circumference, or MUAC, provides information about children’s nutritional state, for example if they were malnourished.

Head circumference was measured just for children born with very low birth weight. This measurement was taken because very low birth weight children are at risk for small head size, and because head circumference is often used in studies of young children as a proxy indicator of brain size and growth. Thus, this measurement provides a means of assessing a critical component of growth in a high-risk population over time.

Measurements were taken twice for each of these indicators of physical development. The data file includes each individual measurement, as well as a composite variable providing the average of the two measurements.

This concludes the discussion of the measures of physical development that were used in all rounds of data collection. To return to the chart of direct child assessments to make another selection, click the “Return to List” button. To exit the module completely, click the “Exit” button or you will automatically be advanced to the next slide within the module.

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Similar to the assessments of cognitive development for the 9-month and 2-year data collections, the ECLS-B adapted the motor scale from the full Bayley Scales of Infant Development, Second Edition, BSID-II, for use in national data collection. The motor scale of the Bayley Short Form-Research Edition, or BSF-R, was also administered in item sets, and scores indicate how the ECLS-B children would have performed on the full BSID-II assessment had they been administered all of the BSID-II items. For more on the development of the BSF-R and the item sets used in the assessment, please watch the BSF-R cognitive assessment section of this module.

The ECLS-B data file includes indicators of children's overall motor skills as measured by the BSF-R motor scale in both the 9-month and 2-year data collections. These include overall scale scores, X1MTRSCL and X2MTRSCL, and standardized *t*-scores, X1MTRTSC and X2MTRTSC.

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In addition to an overall indicator of motor skills, the ECLS-B provides a series of proficiency probabilities that reflect children's performance on a cluster of four to six items of about the same level of difficulty. These proficiency probabilities are not meant to be interpreted as subscale scores. Proficiency probabilities can be used to better understand where growth is occurring by looking at what kinds of skills children are demonstrating, in particular the difficulty of the those skills. Scores on the proficiency probabilities range from 0 to 1 and indicate the probability that a child has acquired the skills represented in the cluster of items. The higher a child's score is on a given proficiency probability, the more likely it is that the child had acquired the skills measured in the item set.

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These are the 10 proficiency probability levels available for analyses of motor skills at the 9-month and 2-year time points. The levels are ordered and show a progression from easier to more difficult skills from A to J. Thus, the levels can be thought of as describing a developmental sequence. The levels are named to reflect the common content or skills that the items within each cluster tap. However, a researcher interested in using the proficiency levels should read the more detailed descriptions of the levels in the user documentation in order to better understand exactly what skills each level covers. For example, level A refers to children's ability to use visual tracking to guide hand movements to pick up a small object, which is a fine motor skill. Again, researchers should keep in mind that these are levels, not subscales, even though the content of the items in the cluster tends to be similar.

This concludes the discussion of the motor scale of the Bayley Short Form-Research Edition that was fielded during the nine-month and two-year data collections. To return to the chart of direct child assessments to make another selection, click the "Return to

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As in the 9-month and 2-year rounds, the constructs of fine and gross motor skills were measured in the preschool and kindergarten rounds. The Motor Scale of the Bayley Short Form-Research Edition, which was used in the first two rounds of data collection, was not appropriate for measuring the motor skills of children once they became preschool age. The study therefore switched to measuring motor skills using different assessments that were age-appropriate.

Fine motor skills were assessed by asking children to draw basic geometric shapes and to build a structure with blocks after watching the assessor build the same structure.

For each item measuring fine motor skills in each round of data collection, the data file includes one variable describing the child’s performance on the item. In addition, composite variables that are overall indicators of the children’s fine motor skills on the two groups of items, that is building and drawing, are provided. Composite variables were created for the drawing items in the preschool and both kindergarten collections. A composite variable for the building items was only created for the preschool collection, because there was only one building item included in the kindergarten collections. Additionally, there are variables on the data file indicating which hand a child used when drawing the geometric shapes.

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Gross motor skills were assessed by asking the children to jump, balance on one foot, hop on one foot, skip, walk backward, and catch a bean bag.

As with the fine motor skills assessments, the data file includes one variable for each item measuring gross motor skills in each round of data collection that describes the child’s performance on the item. However, composite variables describing overall performance were not created. For the balance on one foot and hop on one foot items, the data file also includes variables indicating which foot the child used first to try to demonstrate the skill and how many tries, up to 3, the child took.

This concludes the discussion of the measures of fine and gross motor skills that were fielded during the preschool and kindergarten data collections. To return to the chart of direct child assessments to make another selection, click the “Return to List” button. To exit the module completely, click the “Exit” button or you will automatically be advanced to the next slide within the module.

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When the study children were 9 months old, the ECLS-B used the Nursing Child Assessment Teaching Scale, or NCATS, to measure socioemotional functioning. In the NCATS, the parent is asked to review a list of activities appropriate for children ranging in age from birth through about 2 years, to select the first activity that the child could not do, such as stacking blocks, and then teach the child the task. The focus of the NCATS is the interaction between the parent and the child, particularly their responsiveness to one another, not the child's success or failure at learning the task. Rather than evaluate the parent-child interaction while in the home, field staff videotaped the interaction, and trained coding staff later viewed and evaluated the interaction on a variety of dimensions.

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The coding staff observed whether parents and children exhibited any of 73 target behaviors included in the NCATS coding scheme. Coders noted either the presence or absence of each behavior. Item-level data with the code for each of these behaviors are included on the data file. In addition, three composite variables are available. The first, the total parent score, focuses on the parent's teaching behaviors and indicates the total number of behaviors, out of 50, that the parent displayed according to the coders. The second, the total child score, focuses on the child's response to the parent and indicates the total number of behaviors, out of 23, that the child displayed according to the coders. The total score is the sum of the parent and child scores. It provides an indicator of the quality of the interaction between parent and child, in particular the coordination and responsiveness of their communication with one another.

This concludes the discussion of the Nursing Child Assessment Teaching Scale that was fielded during the nine-month data collection. To return to the chart of direct child assessments to make another selection, click the "Return to List" button. To exit the module completely, click the "Exit" button or you will automatically be advanced to the next slide within the module.

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The Two Bags Task was used to measure socioemotional functioning in the 2-year and preschool data collections. This task was a modification of the Three Bags Task that had been used in other studies of young children such as the Study of Early Child Care. The Three Bags Task is a semi-structured activity completed by the parent and child in interaction. Because the Three Bags Task requires at least 15 minutes for the dyad to complete, the activity was shortened to just two bags, or activities, which could be completed in 10 minutes. During this 10-minute task, the parent-child dyad was asked to play with two different sets of toys, each set contained in a numbered bag. In the 2-year data collection, bag number 1 contained a children's picture book and bag number 2 contained a set of dishes. In the preschool data collection, bag number 1 contained a book and bag number 2 contained Play-Doh®, two cookie cutters, and one rolling pin. The only requirement for parents was that they had to play with the toys in numerical

order. This measure provides information on the quality and quantity of certain parent behaviors such as parental sensitivity, as well as some child behaviors, such as engagement with the parent. Rather than evaluate the parent-child interaction while in the home, field staff videotaped the parent-child interaction, and trained coding staff later viewed and evaluated the interaction on a variety of dimensions.

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The coding staff evaluated the interactions between parents and children on a series of items that factored into the development of separate rating scales for parents and children. For parents, the coding system provides ratings of the quality and quantity of parental emotional support, parental negative regard for the child, parental intrusiveness, parental cognitive stimulation of the child, and parental detachment. For children, the coding system provides ratings of the quality and quantity of the child's positive regard towards and engagement with the parent, the child's negativity toward the parent, and the child's involvement in the activities. For the parent and child scales, there were slight differences in the composition of the scales in the 2-year collection and in the preschool collection. More information about the meaning of the scales and the differences across rounds can be found in the technical documentation, including the psychometric reports that are available online. Links to these reports are provided in the summary and resources slide at the end of this module.

The scales are coded using a 7-point Likert-type rating scale that ranged from very low (1) to very high (7). The higher the score, the more frequently the parent or child exhibited the target behavior. Some of the scales are indicative of positive behaviors and some of the scales are indicative of negative behaviors; therefore, a higher score does not always mean a higher frequency of positive interactions.

This concludes the discussion of the Two Bags Task that was fielded during the two-year and preschool data collections. To return to the chart of direct child assessments to make another selection, click the "Return to List" button. To exit the module completely, click the "Exit" button or you will automatically be advanced to the next slide within the module.

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The 2-year round of data collection included an assessment of children's security of attachment to their parent based on observations made in the home. Attachment is the deep emotional bond that forms between a young child and that child's caregivers and forms the basis for the child's development of a sense of security. When a young child feels secure, he or she is more likely to explore the environment freely, but will return to the parent for comfort when anxious or distressed. Researchers have shown that the effects of the quality of children's early attachment relationships are enduring, even into adulthood.

One way to measure the quality of the parent-child attachment relationship is to use the card sort method. A common attachment card sort is the Attachment Q-Sort, or AQS. In

the AQS, the researcher will observe whether a child exhibits a variety of behaviors while interacting with his or her caregiver. Following the observation, the observer sorts 100 cards, each with a description of a child behavior with parent or caregiver that could be observed under stressful circumstances, such as when a stranger is in the room. The cards are sorted into piles according to the degree to which the behavior applies to the child. The AQS can take the observer about 45 minutes to complete, which was too long to be used in the ECLS-B. Therefore, a shortened and procedurally streamlined version of the card sort task was developed for use in the study. This shortened version, which takes about 10 minutes and is referred to as the Toddler Attachment Sort, 45 items, or the TAS-45 for short, required observers to indicate the degree to which children exhibited 45 different behaviors while interacting with their parent or caregiver.

The TAS-45 was developed as a laptop application that interviewers accessed after observing the parent and child for several hours during the home visit. Interviewers completed the TAS-45 as soon as possible after leaving the child's household. The behaviors included in the TAS-45 were ones that the interviewer would likely have had the opportunity to observe in the home, such as whether a child hugged and cuddled against his or her mother without being asked to do so, whether the child took off and explored new things on his or her own, and whether the child got upset if the mother left the area where the child was. The interviewer first sorted the 45 items into two piles, those that applied, or were observed, and those that did not apply, or were not observed. Each pile was then re-sorted to produce a total of four piles ranging from "almost always applies" to "rarely or hardly ever applies." The interviewer did have the option of sorting a card into an "undecided" pile if he or she felt the particular behavior could not be sorted with confidence. The results of this sorting were used to describe children's attachment security, dependency, and sociability.

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Researchers have identified four primary styles of attachment:

- Attachment Style A, or Avoidant;
- Attachment Style B, or Secure;
- Attachment Style C, or Ambivalent, which is also sometimes called resistant; and,
- Attachment Style D, or Disorganized or disoriented.

The TAS-45 provides information on these four traditional attachment classifications, which were determined based on the interaction children had with the caregiver during the home visit. The variable X2TASCLS is the indicator of the children's attachment style as Secure, or Type B; Insecure-Avoidant, or Type A; Insecure-Ambivalent, or Type C; and Insecure-Disorganized, or Type D.

In addition to the overall attachment classification, the TAS-45 generates scores for nine hotspots (or clusters), which are characteristics that were used to create profiles to determine children's attachment styles. These variables are named with X2TASHS, with the last character indicating the number of the hotspot. The hotspots provide more

detailed information about children's attachment behaviors than the overall classifications do.

Hotspots can be used independently of the attachment classification. While the hotspot scores are used to create profiles of attachment style, it is recommended that analysts use the traditional attachment classifications when examining issues related to attachment.

Researchers who are not interested in investigating attachment, per se, might want to use children's hotspot scores to examine associations between that hotspot's domain and the children's outcome measures. For example, a researcher interested in exploring the development of children's social competence could examine the association between a hotspot such as "Enjoys company" and measures of socioemotional functioning in later rounds of data collection.

Two other scores are derived from the TAS-45 and are available on the data file. These scores are traditionally obtained by researchers using the AQS and are factor scores. The security score, X2TASSEC, indicates the child's ability to use the caregiver as a secure base when exploring his or her surroundings. The dependency score, X2TASDEP, is an indication of the child's clinginess to the parent.

This concludes the discussion of the Toddler Attachment Sort that was fielded during the two-year data collection. To return to the chart of direct child assessments to make another selection, click the "Return to List" button. To exit the module completely, click the "Exit" button or you will automatically be advanced to the next slide within the module.

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Children's socioemotional development was not measured directly in the preschool and kindergarten data collections. Instead, it was measured indirectly by collecting information from a number of sources, including parents, early care and education providers, and kindergarten teachers. The information collected addressed key socioemotional constructs related to children's early learning experiences, such as prosocial skills, approaches toward learning, problem behaviors and emotions, emotional knowledge, and temperament. No one existing scale tapped all the constructs the study wanted to measure, so socioemotional batteries were developed primarily with items from existing scales, though some items were developed specifically for the ECLS-B. One variable for each item included in the batteries is provided on the data file. More information about the items and variables can be found in chapter 7 of the preschool-kindergarten 2007 psychometric report – which can be accessed from the summary and resources screen at the end of this module or by clicking on the underlined screen text.

This concludes the discussion of the indirect measures of socioemotional skills and behavior that were used during the preschool and kindergarten data collections. The module summary is presented next. To return to the chart of direct child assessments to

make another selection, click the “Return to List” button. To exit the module completely, click the “Exit” button or you will automatically be advanced to the next slide within the module.

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This module has provided you with more detailed information about some of the topics and components of the study described within the introductory module. Specifically, this module focused on the direct child assessments collected through the ECLS-B study from children, their families, and their early care and education settings. The module’s objectives and the resources provided throughout the module are summarized here for your reference.

You may now proceed to the next module in the series or exit the module.